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ORAL HEALTH AND DENTAL STATUS IN DRUG ABUSERS AT BIHAR, INDIA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Aim: To ascertain the oral health status and dental health status of drug abusers (DA) and compare them with those of non-drug-abusing dental patients. **Material and method**: Hospital-based cross-sectional study on 200 consecutive male DA attending the outpatient department of a dental college hospital. Detailed history and clinical findings were recorded in a predetermined format by trained dental surgeons. Data entry and statistical analysis were done using SPSS 10.0.5, Oral mucosal lesions (OMSL), dental lesions (DHSL), 'decay, missing, filling teeth' index (DMFT), brushing material (toothpaste/others), mode (toothbrush/others), and frequency per day (once/twice). **Results:** The occurrence of at least one oral mucosal lesion was 49% in drug abusers and 6% in controls, the difference being statistically significant (P = 0.00). In brushing habits, DL were significantly associated with brushing material (P = 0.005) and frequency (P = 0.001) when a comparison was made between DA and controls. The difference of ≤7 in the DMFT score between DA and controls in relation to material used for brushing (P = 0.04) and frequency of brushing (P = 0.001) was statistically significant. For any oral mucosal lesion, odds ratio (OR) was 15.1 (95% CI, 6-37.5); for any potentially malignant states, OR was 54.4 (95% CI, 3.2-911.3); for dental caries, the OR was 3.3 (95% CI, 1.8-5.9); and the OR for extrinsic stains was 8 (95% CI, 2.7-24). **Conclusion:** A large gap exists with respect to dental and oral health status between DA and the general population. DA is at 54.4 time's higher risk for having a potentially malignant state. These factors highlight the need for regular oral examination and dental treatment in DA.

KEYWORDS: oral precancer, Drug abuse, oral health.

I. INTRODUCTION

Substance abuse is a disorder characterized by repetitive drug use that results in social or economic distress and is often associated with medical problems. Drug addiction Is a relapsing, chronic disorder characterized by strong urge to take a drug and loss of self-control in limiting drug intake. The substances or drugs may be natural or synthetic, the use of which has a psychoactive effect and alters or modifies the functions of a living organism. Globally, the number of drug abusers in 2007 was 200 million, i.e., 4.8% of the global population. In the latest reports 11.35 million persons were addicted to drugs in India.

In India, the abuse of cannabis, alcohol and raw opium has been traditionally known; while the abuse of psychotropic synthetic and narcotic drugs substances is comparatively a new phenomenon.

There are various medical complications of drug addiction relevant to dentistry which includes abscesses at site of injection, viral hepatitis, human immunodeficiency virus (HIV) infection, endocarditis and anesthesia-related complications. Studies have strongly suggested that the dental health and oral health are affected by drug abuse. prolonged use of other psychotropic substances such as tobacco, alcohol and areca nut further deteriorates the health status of the individual. Drugs abused adversely affect the oral soft and hard or may lead to potentially malignant states like leukoplakia, oral submucous fibrosis, erythroplakia or may predispose to oral infections such as candidiasis, lichen planus, gingivitis by compromising local immunity.

Description of the oral and dental lesions among drug abusers in Patna is nil. A hospital-based cross-sectional study was performed to ascertain the prevalence of oral health status and dental health status among drug abusers

and compare them with those of non-drug-abusing dental population at Patna, Bihar in India.

II. MATERIALS AND METHODS

The study group constituted 200 male drug abusers examined over a period of 14 months at Patna dental college and hospital, Patna 4.

All drug abusers in the study were using drugs at least thrice in a week and were having features of tolerance, withdrawal symptoms and continued use despite social, economic and medical problems. Occasional users were not included in the study. The controls were also chosen from Patna dental college and hospital, Patna 4. A random selection method was used for selection of control group, a comprehensive clinical history was taken and recorded by dental surgeons and trained physician in a predetermined format.

Complete history was recorded. Lesions were diagnosed as per the clinical features and divided into OMSL (include all oral mucosal soft tissue lesions) and DHSL (include dental hard and soft tissue lesions).

The study subjects were divided into two groups: the drug users and controls (non-drug users). Based on smoking, alcohol (beer/wine/spirits) and chewing (areca nut and/or tobacco) habits, the study population was categorized without any overlap into no habitual substance abusers; only tobacco smokers; only alcohol users; those who chewed areca nut with/without tobacco; tobacco smokers who used alcohol; tobacco smokers who chewed areca nut with/without tobacco; alcohol users who chewed areca nut with/without tobacco; and tobacco smokers who chewed areca nut with/without tobacco and used alcohol. According to age, the study population was divided into 5 groups as those aged ≤25 years, 26 to 30 years, 31 to 35 years, 36 to 40 years and >40 years.

The frequency of OMSL and DHSL was noted down. DMFT (decay, missing, Filling teeth) index was employed to assess the prevalence of caries.

III. RESULTS

Nineteen percent of the study population belonged to less than 25 years age group; 17% were in 26 to 30 years; 26%, in 31 to 35 years; 28%, in 36 to 40 years; and 13%, in >41 years age group. The age range was 18 to 48 years, with a mean of 32.78 years. The mean age of initiation into drug abuse was 24.88 years, varying from 12 to 41 years of age.

With regards to brushing habit, 89% of drug abusers and 99% of controls used toothpaste (P = 0.003), 94% of drug abusers and 99% of controls used toothbrush (P = 0.05) and 83% of drug abusers and 97% of controls brushed once daily (P = 0.001).

Among the substances abused, 20% of drug abusers and 20% of controls smoked tobacco only; 44% of drug abusers and 5% of controls smoked tobacco and used alcohol; 19% of drug abusers smoked tobacco, chewed areca nut with/without tobacco and used alcohol; 2% of drug abusers and 65% of controls did not use any other psychoactive substances. There was a statistically significant difference between drug abusers and controls with regards to habit (P = 0.000).

Of all the drug abusers, 87% smoked tobacco, 71% used alcohol and 34% chewed areca nut with or without tobacco. Of the controls, 27% smoked tobacco, 8% used alcohol and 6% chewed tobacco with or without areca nut. The difference was statistically significant (P = 0.000).

Among drug abusers, 51% were single drug users and 49% used more than one drug. Of them, 90% used narcotics, 41% used cannabis [marijuana (3%), dried parts (38%)], 22% used central nervous system depressants [benzodiazepine (22%)], 1% used central nervous system stimulants (cocaine 1%) and 22% used miscellaneous substances [antihistaminics (21%) and whiteners (1%)].

With regards to mode of abuse, 16% ingested drugs, 42% inhaled or smoked or snorted drugs, 6% preferred intravenous (IV) method, 5% either inhaled or ingested drugs, 3% either ingested or used IV method, 20% inhaled or smoked or used IV method and 8% used all methods.

Forty-nine percent of drug abusers and 6% of controls had at least one oral mucosal lesion (P = 0.000), and 91% of drug abusers and 95% of controls had at least one dental lesion. The mean DMFT for drug abusers and controls was 4.84 and 3.73 respectively, this difference being statistically significant (P = 0.000). A DMFT score of ≤7 was observed in 79 drug abusers and all controls, the difference being statistically significant (P = 0.000). Among drug abusers, of all teeth examined, it was observed that the mean number of decayed teeth was 2.9; missing teeth, 1.62; and filled teeth, 0.32; while in controls, it was 3.03, 1.71 and 1.67 respectively. Of all the teeth examined in drug abusers, 10.36% were decayed; 5.79%, missing; and 1.14%, filled; while in controls, 9.85% were decayed, 2.75%, missing; and 0.71%, filled. The difference was statistically significant (P = 0.000).

The predominant OMSL in drug abusers were leukoplakia, smoker's melanosis, oral melanosis and nicotina palatae, while in controls, the predominant oral mucosal lesion was smoker's melanosis. The common DHSL in drug abusers and controls were gingivitis, dental caries and periodontitis. As compared to controls, the drug abusers had statistically significant odds for leukoplakia (OR = 42.13), smokers melanosis (OR = 3.21), oral melanosis (OR = 48.09), any oral mucosal

lesion (OR = 15.05), any potentially malignant state (OR = 54.36), dental caries (OR = 3.25) and extrinsic stains (OR = 8) Table I. Among 19% of drug abusers, it was observed melanotic lesions that appeared as a patch in lateral border of tongue that was bluish to black in color, which we referred to as oral melanosis. Care had been taken in such situations to rule out racial pigmentation and post inflammatory melanosis. Of these 19 cases, 7 were single drug users (3 abused brown sugar, 3 abused dried parts of cannabis and 1 abused benzodiazepine) and the remaining 12 used more than one drug (Bupenorphine, 9; brown sugar, 9; dried parts of cannabis, 7; antihistaminics, 5; benzodiazepines, 3). Tobacco was used by all these 19 drug abusers. Eighteen of them smoked tobacco and 1 chewed areca nut with tobacco.

IV. DISCUSSION

It was reported in 2004 that India had 8.75 million cannabis abusers, 2.04 million opiates abusers and 0.29 million hypnotics and sedatives abusers. The reported annual incidence rates (per 100 persons) among males in Delhi, India, for abuse of any substance, alcohol, tobacco, cannabis and opioids were 5.9, 4.2, 4.9, 0.02 and 0.04 respectively12. There are no reports of oral lesions in this high-risk population from North India. Given the significant number of drug abusers in this part of the world, this study was performed to ascertain various OMSL, DHSL and DMFT scores in a selected hospital-based population in Patna, North India and compare these with non-drug-abusing dental hospital based population. To the best of our knowledge, this is the first report of oral lesions in drug abusers in this part of the world. Of the study population, 2% of drug abusers and 65% of controls had no other psychoactive substance abuse, indicating that 98% of drug abusers used other substances incidentally. Extensive use of these known carcinogens and co-carcinogens places them at a high risk of developing cancer.

The brushing habits significantly varied between the drug abusers and controls. Occurrence of DHSL was not influenced by the abuse of drugs but was influenced by brushing habit, frequency and material used. Low DMFT score was associated with toothpaste use and frequency of brushing. Of all the examined teeth in drug abusers, 5.79% teeth were missing and 1.14% were filled teeth as compared to 2.75% missing and 0.71% filled teeth in controls, which implies that the dental problems in drug abusers were due to poor oral hygiene measures and this could be effectively influenced and corrected by proper education and counseling measures. The present study shows a high predominance (49%) of OMSL in drug abusers as compared to controls (6%), while DHSL had no significant difference between drug abusers and controls. Interestingly, 21% of drug abusers had potentially malignant states and this clearly shows that drug abusers are a high-risk population for developing malignancy as compared to 1.3% in our earlier dental hospital-based population. Prevalence of leukoplakia and oral submucous fibrosis among drug abusers in our study was 17% and 4% respectively; whereas in general dental patients in our dental hospital, it was 0.7% and 0.6%. The high incidences of leukoplakia among drug abusers with odds of 42.13 as compared to controls indicate that drug abusers are highly vulnerable to this potentially malignant lesion. In this study it was observed melanin pigmentation along the lateral border of tongue in 19% of the drug abusers. This area of pigmentation appeared as diffuse pale bluish black macules of varying size, often extensive with ill-defined margins. Racial pigmentation, smoker's melanosis and post-inflammatory melanosis are possible differential diagnoses of this condition that need to be excluded. The cause of melanin pigmentation could be attributed to metabolic alterations, alteration in the hormonal levels, chronic malnutrition, anemia, or a change which chronic drug abuse produces when accompanied by tobacco smoking. It has been reported that in a study of 100 Greek drug abusers, 35% had melanotic lesions in lip. Smokers melanosis was observed in buccal, labial, gingival and palatal mucosa of 17 drug abusers (of 87 smokers) and 6 controls (of 27 smokers). Though this lesion is a physiological reaction to the tobacco smoke, an OR of 3.21 indicates that abusers are more vulnerable to this lesion more often than controls. Oral hygiene was poor and incidence of dental caries was higher among drug abusers than among controls. This was however related to their brushing habits and was not by drug abuse. This fact emphasizes the need for teaching and counseling drug abusers to maintain their oral hygiene. The incidence of OMSL is higher among psychoactive substance abusers, as in earlier reported studies. The controls were drawn from a dental hospital-based population, hence the incidence of dental lesions is high among controls. The large difference between the upper and lower end of CI for OR in OMSL and DHSL among different psychoactive substance users and the individual OMSL and DHSL indicates that the drug data is not uniformly distributed. Further studies have to be done with larger sample size to estimate the associated risk for having OMSL among drug abusers.

V. CONCLUSION

The prevalence of OMSL and potentially malignant states among drug abusers is high as compared to controls. Prevalence of DHSL when compared between drug abusers and hospital-based population was similar. The brushing material, frequency of brushing and mode of brushing were significantly different between the drug abusers and dental hospital-based controls. These factors highlight the need for regular oral examination and treatment of drug abusers, along with emphasizing the need for instituting proper oral hygiene maintenance, early detection and treatment of OMSL and specific potentially malignant states. More studies and research work in this field is needed.

REFERENCES

1. Rooban T, Anita Rao, Elizabeth Joshua. Dental and oral health status in drug abusers in Chennai, India: A cross-sectional study. Journal of Oral and Maxillo Facial Pathology, 2008; 12: 1.
2. Braunwald E, Fauci AS, Kasper DL, Hauser SL, Longo DL, Jameson JL, editors. Harrisons Principle of Internal Medicine. Alcoholism and drug dependency, Messing RO. 15th ed. McGraw-Hill, 2003; 2557.
3. World Drug Report. United Nations Office on Drugs and Crime publication. Geneva, 2007; 30.
4. Ray R. Extent, Pattern and trends of drug abuse in India. Ministry of social justice and empowerment, Government of India and United Nations office on drugs and crime, Regional office of South Asia. New Delhi: Executive Summary, 2004; 7.
5. World Drug Report. United Nations Office on Drugs and Crime publication. Geneva, 1997; 34-8.
6. Porter S. Oral health sensations associated with illicit drug abuse. Br Dent J, 2005; 198: 147.
7. Robinson PG, Acquah S, Gibson B. Drug users: Oral health related attitudes and behaviors. Br Dent J, 2005; 198: 219-24.
8. Charnock S, Owen S, Brookes V, Williams M. A community based programme to improve access to dental services for drug users. Br Dent J, 2004; 196: 385-8.
9. Thavarajah R, Rao A, Raman U, Rajasekaran TS, Joshua E, Hemalatha R, *et al*. Oral lesions of 500 habitual psychoactive substance users in Chennai, India. Arch Oral Biol, 2006; 51: 512-9.
10. World Health Organization. Oral Health survey: Basic Methods. Geneva; WHO, 1997.
11. Siddiqui HY. National survey on extent, pattern and trends of drug abuse in India, Drug abuse monitoring system: A profile of treatment seekers, Ministry of social justice and empowerment, Government of India and United Nations office on drugs and crime, Regional office of South Asia. New Delhi, 2004; 3-9.
12. Mohan D, Chopra A, Sethi H. Incidence estimates of substance use disorders in a study population from Delhi, India. Indian J Med Res, 2002; 115: 128-35.
13. Saraswathi TR, Ranganathan K, Shanmugam S, Ramesh S, Narasimhan PD, Gunaseelan R. Prevalence of oral lesions in relation to habits: Cross sectional study in South India. Indian J Dent Res, 2006; 17: 121-5.